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Systemization at the Blue Grass Chemical Agent-Destruction Pilot Plant

The Blue Grass Chemical Agent-Destruction Pilot Plant, or BGCAPP, is being built to safely and efficiently destroy a stockpile of chemical weapons currently in storage at the Blue Grass Army Depot. The stockpile consists of blister agent in projectiles and nerve agent in projectiles and rockets. Building and safely operating BGCAPP involves six distinct stages of work including design, construction, systemization, pilot testing, operations and closure. The BGCAPP design stage was completed in 2010. The second and third stages, construction and systemization, are currently under way. The purpose of this fact sheet is to provide an overview of the activities associated with systemization.

Systemization involves all activities required to ensure BGCAPP is ready to begin chemical weapons destruction operations. It will prepare the BGCAPP team for mission success in three areas: paper, plant and people.

- **Paper:** Paper refers to the development of all standard operating procedures and maintenance instructions, as well as test plans for various elements of the plant. A tremendous amount of planning is required to ensure BGCAPP runs efficiently.
- **Plant:** Systemization involves the commissioning, start-up and testing of the physical plant – ensuring all the systems and facilities work properly and function together. It includes testing of the software programs that will run the plant and also affords personnel the opportunity to access the areas and equipment in the plant that will become restricted once operations begin. As construction teams complete various facilities and structures, they will turn them over to the start-up group for testing. This “waterfall” approach maximizes efficiency and provides systemization experts the opportunity to identify and solve any problems as soon as possible.
- **People:** Safety of the BGCAPP workforce is paramount. A key element of systemization involves the hiring and training of the operations and maintenance staff needed to complete the BGCAPP mission. Activities include classroom learning, practical training on physical and simulated processes, on-the-job training with mentors and a certification program.

The final step of systemization brings together all three aspects - people, plant and paper - and is referred to as optimization. Optimization includes an Operational Readiness Review (ORR) process and seeks to confirm the pilot plant is capable of conducting its mission, while being fully protective of personnel and the environment. An independent review team will assess these ORRs, which evaluate the readiness of the whole, multi-functional organization to ensure the pilot plant is prepared for destruction operations.

To support this process, each operations team will participate in Integrated Operations Demonstrations, during which they will test-run the systems and procedures that will occur during normal operations. They will also practice reacting to unexpected conditions or emergencies. Personnel will use simulated munitions known as Assembled Chemical Weapons Alternatives (ACWA) Test Equipment to complete the demonstrations. These munitions are the same size, weight and configuration as the real chemical weapons that will be destroyed at BGCAPP, except they do not contain chemical agent or energetics. The demonstrations will support the decision to declare readiness to begin BGCAPP pilot testing and chemical agent destruction operations.

Because of the complexity of the Blue Grass chemical weapons stockpile, the systemization phase at BGCAPP is expected to take about 78 months. This will allow for the various equipment and processes used for the different types of chemical agents and munitions to be fully prepared for destruction operations. Following the successful completion of systemization, the fourth project stage, called pilot testing, will begin with the gradual introduction of actual chemical agent-filled munitions into the system. Destruction operations are expected to begin at BGCAPP in 2020.

To learn more about systemization stage, visit the ACWA YouTube channel, www.youtube.com/usaeacwa, and view the *Systemization at the Pueblo and Blue Grass Chemical Agent-Destruction Pilot Plants* video. For more information about BGCAPP and updates on current progress, visit www.peoacwa.army.mil.